

CLAIMS

I claim:

1 1. A system for storing energy during an off-peak period
2 and distributing energy during a peak period in a wholesale
3 energy market, said system comprising:

4 a first energy directing means for directing energy
5 produced in the wholesale energy market during the off-peak
6 period into an energy storage means for storing energy; and

7 a second energy directing means for directing energy from
8 said energy storage means into the wholesale energy market
9 during the peak period.

1 2. The system according to claim 1, wherein said energy
2 storage means is selected from the group consisting of a pumped
3 hydropower system, a compressed air energy storage system, a
4 battery system, a flywheel system, a superconducting magnetic
5 energy storage system, a supercapacitor system, a thermal energy
6 storage system, and a mechanical potential energy storage
7 system.

1 3. The system according to claim 1, wherein said energy
2 storage means comprises a mechanical potential energy storage
3 system including a mass, a lifting means for lifting said mass,
4 and a lowering means for lowering said mass.

1 4. The system according to claim 3, wherein said
2 mechanical potential energy storage system creates potential
3 energy by lifting said mass with said lifting means using energy
4 produced during the off-peak period; and

5 wherein said second energy directing means is powered by
6 said potential energy during the peak period when said mass is
7 lowered with said lowering means.

1 5. The system according to claim 1, wherein said energy
2 storing means comprises a mechanical potential energy storage
3 system selected from the group consisting of a pulley and cable
4 system, a block and tackle system, a chain pull system, and a
5 hydraulic system.

1 6. A method of storing energy during an off-peak period
2 and distributing energy during a peak period in a wholesale
3 energy market, said method comprising:

4 producing energy in the wholesale energy market during the
5 off-peak period;

6 directing the produced energy into an energy storage means;

7 storing the produced energy in the energy storage means;

8 and

9 directing the produced energy stored in the energy storage
10 means into the wholesale energy market during the peak period.

1 7. The method according to claim 6, further comprising
2 selecting the energy storage means from the group consisting of
3 a pumped hydropower system, a compressed air energy storage
4 system, a battery system, a flywheel system, a superconducting
5 magnetic energy storage system, a supercapacitor system, a
6 thermal energy storage system, and a mechanical potential energy
7 storage system.

1 8. The method according to claim 6, further comprising:
2 configuring the energy storage means with a mechanical
3 potential energy storage system including a mass, a motor, a
4 means for lifting the mass connected to the motor, a generator,
5 and lowering means for lowering said mass connected to the
6 generator.

1 9. The method according to claim 8, further comprising:
2 creating potential energy by lifting the mass with the
3 motor and the lifting means for lifting using the energy
4 produced during the off-peak period; and
5 powering the generator during the peak period with the
6 potential energy when the mass is lowered with the lowering
7 means.

1 10. The method according to claim 6, further comprising
2 configuring the energy storage means with a mechanical potential
3 energy storage system selected from the group consisting of a
4 pulley and cable system, a block and tackle system, a chain pull
5 system, and a hydraulic system.

1 11. A method for creating profit in a wholesale energy
2 market, said method comprising:
3 producing energy in the wholesale energy market during the
4 off-peak period;
5 directing the produced energy into an energy storage means;
6 storing the produced energy the energy storage means;
7 directing the produced energy stored in the energy storage
8 means into the wholesale energy market during the peak period; and
9 selling the produced and stored energy directed into the
10 wholesale energy market during the peak period at a peak period
11 price.

1 12. The method according to claim 11, further comprising
2 selecting the energy storage means from the group consisting of
3 a pumped hydropower system, a compressed air energy storage
4 system, a battery system, a flywheel system, a superconducting
5 magnetic energy storage system, a supercapacitor system, a
6 thermal energy storage system, and a mechanical potential energy
7 storage system.

1 13. The method according to claim 11, further comprising:
2 configuring the energy storage means with a mechanical
3 potential energy storage system including a mass, a motor, a
4 means for lifting the mass connected to the motor, a generator,
5 and lowering means for lowering said mass connected to the
6 generator.

1 14. The method according to claim 13, further comprising:
2 creating potential energy by lifting the mass with the
3 motor and the lifting means for lifting using the energy
4 produced during the off-peak period; and
5 powering the generator during the peak period with the
6 potential energy when the mass is lowered with the lowering
7 means.

1 15. The method according to claim 11, further comprising
2 configuring the energy storage means with a mechanical potential
3 energy storage system selected from the group consisting of a
4 pulley and cable system, a block and tackle system, a chain pull
5 system, and a hydraulic system.